

by said signal pads whereby said power and ground connection pads and said signal pads can comprise any appropriate contact material, such as but not limited to tungsten, chromium, copper (electroplated or electroless), aluminum, polysilicon, or the like.

29. A semiconductor device structure comprising:

a semiconductor substrate comprising semiconductor devices;  
an interconnecting metalization structure connected to said devices;

electrical contact points on an upper top surface of said interconnecting metalization structure and connected to said interconnecting metalization structure;

a passivation layer deposited over said interconnecting metalization structure and over said electrical contact points;  
an insulating layer deposited over said passivation layer said insulating layer being substantially thicker than said passivation layer;

openings through said insulating layer and through said passivation layer down to the upper surface of said electrical contact points;

metal conductors within said openings; and

an upper metalization structure connected to said metal conductors.



30. The method of claim 29 wherein the upper metalization structure connects portions of said interconnecting metalization structure to other portions of said interconnecting metalization structure.

31. The structure of claim 29 wherein said upper metalization structure further comprises:

a plurality of insulating layers;

a plurality of structures of metal interconnecting lines formed between said insulating layers;

a plurality of contact pads in an upper layer of said metalization structure; and

a plurality of filled openings connecting said contact pads with one or more of said structures of metal interconnecting lines further connecting said contact pads with said electrical contact points.

32. The structure of claim 31 whereby said metal interconnecting lines are signal lines, and are substantially wider than lines in said interconnecting metalization structure.

33. The structure of claim 31 wherein said metal interconnecting lines are power buses, and are substantially wider than lines in said interconnecting metalization structure.



34. The structure of claim 31 wherein said metal interconnecting lines are ground buses, and are substantially wider than lines in said interconnecting metalization structure.

35. The structure of claim 31 wherein said metal interconnecting lines are a combination of signal lines and power buses, and are substantially wider than lines in said interconnecting metalization structure.

36. The structure of claim 31 wherein said metal interconnecting lines are a combination of power and ground buses, and are substantially wider than lines in said interconnecting metalization structure.

37. The structure of claim 31 wherein said metal interconnecting lines are a combination of signal and ground buses, and are substantially wider than lines in said interconnecting metalization structure.

38. The structure of claim 29 wherein the size of said contact points is within the range of approximately 0.3 um. to 5.0 um whereby further whereby said contact points can comprise any appropriate contact material, such as but not limited to